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**Notice of Allowability**

Application No.

10/626,578

Examiner

YOUNG T. TSE

Applicant(s)

IIZUKA, KUNIIKO

Art Unit

2611

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 20 August 2007.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date \_\_\_\_\_
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08)<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Charles Gorenstein on September 11, 2007.

The application has been amended as follows:

In claim 5, lines 2-3, "an impulse train" has been changed to "the impulse train" for clarity.

In line 2 of both claims 7 and 8, "the pulse train" has been changed to "the impulse train" for clarity.

In claim 20, line 2, "a pulse train and" has been changed to "an impulse train and a template train which is" to avoid the antecedent basis of "the impulse train" and "the template train".

2. The following is an examiner's statement of reasons for allowance: the prior art fails to show or suggest a correlator comprises a template train generator, a multiplier, an integrator, a quantizer and a negative feedback path. Wherein the integrator integrates an output of the multiplier, which calculates a correlation value between a template train from the template train generator and an impulse train of an input signal. The prior art also fails to show or suggest a correlator comprises a multiplier, a first integrator, a sampling circuit, a second integrator, a quantizer and a negative feedback

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path. Wherein the second integrator integrates an output of the sampling circuit, which samples an output of the first integrator, which integrates an output of the multiplier of an input signal by a predetermined time-series signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

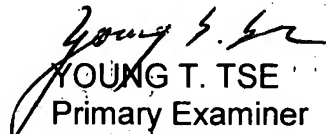
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
YOUNG T. TSE  
Primary Examiner  
Art Unit 2611

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Reply to Office Action of May 18, 2007

Docket No.: 1248-0663PUS1

3. (Previously Presented) The correlator as defined in claim 1, further comprising:  
a second integrator for integrating the output of the quantizer.
4. (Original) The correlator as defined in claim 1, further comprising:  
a converter provided on the negative feedback path, which converts a digital signal to an analog signal.
5. (Original) The correlator as defined in claim 1, wherein, the input signal is <sup>the</sup> ~~an~~ impulse train which has been subjected to pulse position modulation in accordance with digital data.
6. (Original) The correlator as defined in claim 5, wherein, the predetermined time-series signal is generated in accordance with impulses of the impulse train, the impulses being different from each other.
7. (Previously Presented) The correlator as defined in claim 1, wherein, the input signal is the <sup>impulse</sup> ~~pulse~~ train which has been subjected to BPSK modulation in accordance with digital data.
8. (Original) The correlator as defined in claim 7, wherein, the predetermined time-series signal is composed of rectangular waves corresponding to the <sup>impulse</sup> ~~pulse~~ train.

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17. (Original) The correlator as defined in claim 16, wherein, the predetermined time-series signal is generated in accordance with impulses of the impulse train, the impulses being different from each other.

18. (Previously Presented) The correlator as defined in claim 11, wherein, the input signal is the pulse train which has been subjected to BPSK modulation in accordance with digital data.

19. (Original) The correlator as defined in claim 18, wherein, the predetermined time-series signal is composed of rectangular waves corresponding to the pulse train.

20. (Currently Amended) A receiver, comprising a correlator which figures out a correlation between an input signal, which is *an impulse train and a template train which is* ~~a pulse train and~~ a predetermined time-series signal, the correlator including:

a template train generator for generating the template train which is a signal in which a template is repeated;

a multiplier for multiplying the predetermined time-series signal by the input signal  
calculating through multiplication a correlation value between the template train and the impulse  
train;

an integrator for integrating an output of the multiplier;

a quantizer for quantizing an output of the integrator; and